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SUBJECT Aircraft Engine Plant No. 500 in Moscow-Tushino

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(LISTED BELOW)

DATE OF
INFO.

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REGULAR

1. The aircraft engine plant in Moscow-Tushino had the numerical designation 500 and was called Molotov Zavod by the Soviets. (1) Up to the summer of 1948, double row radial engines and in-line engines were built at Plant No 500. The only fact known to source about those piston engines was that the radial engine had a diameter of about 120 cm. These piston engines were seen being shipped to the old test stands and to the Trolley Bus Plant. (2) After the summer of 1948, the production of piston engines gradually decreased, and in October 1949, the noise of turbine engines was heard almost exclusively from the test stands.

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2. The first turbines arrived at the old test stand in July 1948. (3) [REDACTED] at not forwarded shows this turbine to be some kind of radial-flow turbine. When [REDACTED] types of turbines, he said that the turbine seen at Plant No 500 was a Nene type turbine. (4) [REDACTED] the following measurements of the diffuser casing:

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Lower section: Diameter, 70 to 80 cm; height, 20 to 25 cm.

Upper section: Diameter about 70 cm; diameter of aperture in upper section, about 30 cm.

Expellers, which were shipped to the plant by rail, were not mounted on their axles when they arrived.

From German workers and technical personnel working at the plant, source learned that the turbine in production had been developed by Germans. The German personnel were transferred to some unknown location in early September 1949. No PWs were retained in the production proper after July 1948 when the manufacture of turbines was started at the plant.

3. A turbine of the same type as that first seen, but shorter and less powerful, was being tested at the old test stand in August and September 1948. The interrogator did not succeed in clarifying the differences between the two types of turbines. The larger one had a length of about 250 cm, 100 to 110 cm being taken up by the intake section and combustion chambers, 120 to 140 cm by the outlet section. The diameter of the turbine measured at the combustion chambers was 100 to 120 cm. The smaller turbine was shorter by about 50 cm and had a slightly larger diameter at the combustion chamber. Basically, the

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design of the turbines was the same. [REDACTED] the majority of the turbines tested at the new test stand were of the smaller size. (4) 25X1A

4. The manufacture of turbine wheels was observed in workshop 10. These turbine wheels were taken to the assembly shop. Source stated that he had seen turbine wheels with 50 and with 80 blades, but he was not sure whether these two types of wheels were parts of the two different types of turbines. (5) The ratio of scrap was very high. Many thousands of turbine blades were dropped at the scrap dump within a period of four weeks. Many shafts and cores were also seen at the scrap dump.
5. At the new test plant, the first turbines arrived by bus from the assembly shop during the nights of July 1949, one turbine being loaded on one bus. The turbines were unloaded and carried to the new test stands by a detail of six men. [REDACTED] the load was not too heavy for six men. (6) A crane for lifting the turbines was later installed at the new test stand. Some months later the turbines were hauled to and from the test stand by truck. The turbines were then unloaded by means of a crane running on rails. 25X1A
6. After the fall of 1949, about three turbines arrived at the new stands during one night shift, and often the stands were also in operation during the day. A standard procedure could not be determined. According to a rough estimate, not more than five turbines were tested within a 24-hour period. Activities were more intense at the old test plant, but source was unable to get detailed information on the activity there. Source did not know if the turbines were subjected to only one test run. When the turbine was started at the new test plant a whistling noise was heard which later changed to a roar. The volume of the noise did not remain constant. When the test stand was switched off, much smoke developed at the air pipe. The testing of the turbines, which lasted two or three hours, was often interrupted for short periods. Since test runs were made simultaneously at different stands, details were difficult to ascertain. The necessary fuel was brought to the new test plant through underground pipes for which PJs had dug out pipe ducts from the fuel dump pumping station.
7. Statements on the output of the plant can be based only on the schedules laid down for the production of shipping crates. Both types of turbines were shipped in the same type of crate. In February 1949, the production norm was 40 crates per month; by July 1949, this number had risen to 100 crates per month; and after October 1949, 130 to 140 crates were manufactured per month. The plant management urged that the production of shipping crates be increased. Included in these figures for the output of crates were those returned to the plant to be reconditioned, so they could be used again. Storerooms of finished crates were never seen. Therefore source believed that 130 to 140 turbines were produced per month after October 1949. (7)
8. The shipping crates were 250 to 270 cm long, 160 cm wide and 150 cm high. They consisted of two layers of thick boards with tar paper in between. The joints were carefully sealed. The crates were painted a light gray and lettered on all sides as follows:
 "Can be stored until (lagerfachigkeit)"
 "Do"
 "Do not tilt" (with the reproduction of a glass)
 And on top of the crate was painted the word "up". (8)

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This lettering was seen by source on the crates returned to the plant. Under the date until which the turbines could be stored, dates were read on the crates extending as much as two years beyond the date the crates were returned. Names of towns in the Urals were inscribed on the crates returned. Source believes that the turbines had been sent there, but he does not remember details.

9. Work at Plant No 500 was done in two and three shifts. The number of workers assigned to the individual shifts could not be determined.

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Comments.

- (1) The designation of Molotov Zavod is valuable, since the delivery slips of the aircraft plants record only this designation and not the specified plant number. The designation mentioned has apparently been taken over by Zavod 500 from the aircraft plant assigned to it. For layout of the plant and a list of its installations see Annex 4. Annex 2 contains sketches of the new test plant seen by source from his place of work in workshop 63, 20 meters from the test plant.
- (2) The production of 12-cylinder in-line engines and possibly also of radial engines was reported previously. Information in the present report again confirms the fact that some of the engines produced were shipped to the Trolley Bus Plant, previously Aircraft Plant No 82. There is a possibility that a few motor vehicle engines were built in Plant No 500 side by side with aircraft engines, or more probably, that the manufacture of aircraft engines had been resumed at this plant, which had previously been converted to the production of automobile motors.
- (3) On the basis of earlier reports, this date is believed to be correct. The plant seems to have been converted to the manufacture of jet engines about this time. 25X1A
- (4) From source's description and from earlier reports, the turbine in production at the plant is believed to be a copy or a modification of the Mene power plant.
- (5) For sketch of these turbine wheels, see Annex 4. It is believed that the statement regarding the 50 and 80 blades is due to a mistake on the part of the interrogator. Source possibly gave one figure for the impeller assembly and the other for the turbine wheel. At any rate these figures can only be rough estimates. Unfortunately source did not state whether these blades were hollow or solid. From the attached sketch it seems more probable that they were hollow blades.
- (6) The dimensions and the dry weight of the Mene power plant (approximately 700 kg) make it scarcely credible that the turbine was carried to the test stand by six men.
- (7) The statement that about five turbines were manufactured at the plant daily is in agreement with earlier reports. 25X1A
- (8) This information agrees with that in an earlier report. See [redacted] For sketches of the holding devices in these crates, see Annex 3. 25X1A

Annexes:

1. Layout of Plant 500 with Legend
2. Sketches of New Test Stands
3. Sketches of Shipping Crates
4. Sketches of Turbine Wheel and Blades

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